REMARKS

Claims 1-8 and 11-13 have been canceled. Claim 9 has been amended to depend from allowed claim 14. Claims 26 and 27 have been added. Claims 14-25 are allowed. Claims 9, 10 and 14-27 remain in the application.

Objections/Rejections
Under 35 U.S.C. 103

1.00 *The Examiner has rejected claims* 1, 2 and 11-13 *as obvious over* ***Klomp '966*** *(U.S. 4,309,966, January 12, 1982) in view of* ***Yazdi '890*** *(U.S. 5,694,890, December 9, 1997).*

1.10 Regarding claim 1, the Examiner holds that ***Klomp '966*** discloses a valve system for charging and exhausting of combustion chambers of internal combustion engines including;
(a) a cylinder head adapted for securing to a multi-level combustion chamber, the cylinder head including asymmetrical ports which open into the combustion chamber on separate levels (see figure 1);
(b) each port controlled by a valve member larger than the port, the valve member of similar shape as the port, each valve member providing a conical sealing area for contacting the port periphery (see figures 1, 2);
(c) intake valve member having a non-centered cylindrical stem operatively traveling in a cylindrical valve guide sealed by a valve guide seal, each valve stem protruding through an end of the valve guide opposite the combustion chamber to locate a valve spring and accept a follower which captures the valve spring (see figure 3); and
(d) the follower operatively associated with a valve operating assembly to selectively provide axial movement and rotational movement to each valve member and valve stem (see column 4, lines 6-50);
(e) whereby the valve operating assembly first moves the valve member a nominal distance from the port periphery to unseal the port, then rotates the valve member in one direction to open the associated port, next rotates the valve member in an opposite direction to close the associated port, and finally moves the valve member a nominal distance to contact the port periphery and seal the port (see column 4, lines 50 to 67).

Klomp '966 falls to disclose a valve providing a flat sealing area for contacting the port periphery and providing oscillating exhaust valve. However, ***Yazdi '890*** teaches a valve providing a flat sealing area for contacting the port periphery (see figure 2). It would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify the valve seating arrangement of ***Klomp '966*** to that of a flat sealing area, as taught by ***Yazdi '890***, in order to implement an alternative design to that of conical sealing area.

With regard to the oscillating exhaust valve, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the oscillating intake valve to that of an exhaust valve, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co v. Bemis Co., 193 USPQ 8

Regarding claim 2, the Examiner holds that ***Klomp '966*** discloses the valve operating assembly comprising a camshaft assembly operatively associated with each follower and valve member, in that ***Klomp '966*** discloses, actuation of the valve is done, for example, using a rocker arm engaging the free end of the stem (see column 4, lines 8 to 13).

Regarding claims 11 and 12, the Examiner holds that ***Klomp '966*** discloses the claimed invention except for specifying follower and stem as separate elements fitted together using various means. It would have been obvious to one having ordinary skill in the art at the time the invention was made to decompose the follower/stem integral part into separately fitted parts, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman, 168 USPQ 177, 179.*

Regarding claim 13, the Examiner holds that ***Klomp '966*** discloses the follower includes a driven "pin", having an axis a selected distance from the valve stem, for engaging the valve operating assembly (see figure 3).

1.20 Applicant has canceled claims 1-8 and 11-13 in response to the Examiner's rejection of these clams based upon the above cited references.

2.00 *The Examiner has rejected claim 8 as obvious over **Klomp '966** in view of **Yazdi '890** as applied to claim 1 above, and further in view of **Higashi et al.'180** (U.S. 6,196,180, March 6, 2001).*

2.10 The Examiner holds that ***Klomp '966*** in view of ***Yazdi '890*** discloses the claimed invention as recited above. However, the combination fails to disclose the ports are oriented to allow a single camshaft assembly to actuate the valve members controlling the ports. However, ***Higashi et al.'180*** teaches using a single camshaft assembly to actuate the valve members controlling the ports (see column 12. lines 29 to 35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of ***Klomp '966*** in view of ***Yazdi '890*** by providing a single camshaft to actuate the valves, as taught by ***Higashi et al.'180***, in order to reduce the number of parts.

2.20 Applicant has canceled claims 1-8 and 11-13 in response to the Examiner's rejection of these clams based upon the above cited references.

3.00 *The Examiner has rejected claims 9 and 10 as obvious over **Klomp '966** in view of **Yazdi '890** as applied to claim 1 above, and further in view of **Simmons et al. '268** (U.S. 4,113,268, September 12, 1978).*

3.10 Regarding claim 9, the Examiner holds that ***Klomp '966*** in view of ***Yazdi '890*** discloses the claimed invention as recited above. However, the combination fails to disclose each valve seating area includes a seal fitted to the seating surface. However, ***Simmons et al. '268*** teaches a valve seating area that includes a seal fitted to the seating surface (see abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of ***Klomp '966*** in view of ***Yazdi '890*** by providing a seal fitted to the seating surface as taught by ***Simmons et al. '268*** in order to enhance the sealing performance of the valves.

Regarding claim 10, the Examiner holds that ***Simmons et al. '268*** discloses a groove in the valve seating surface to accept the seal therein (see abstract).

3.20 Applicant has amended claim 9 to depend from allowed claim 14. Claim 10 depends from claim 9 and thus also depends from allowed claim 14. Applicant respectfully requests that the Examiner withdraw the rejection of claims 9 and 10 under 35 U.S.C. 103 (a), in view of the amendment to claim 9. Applicant holds that since claim 14 is patentable, dependent claims 9 and 10 are also now patentable in that these claims now recite more specific embodiments of the present invention. Applicants respectfully request that the Examiner withdraw the rejection of claims 9 and 10 under 35 U.S.C. 103 (a), in view of the amendment to claim 9.

Applicant has also added corresponding claims 26 and 27 which depend from allowed claim 20. Applicant holds that since claim 20 is patentable, dependent claims 26 and 27 are also patentable in that these claims recite more specific embodiments of the present invention.

Because Applicant has canceled a total of eleven (11) claims and added two (2) dependent claims, there is no additional fee required.

CONCLUSION

Applicant respectfully traverses the Examiner's rejection and requests reconsideration. Applicants respectfully submit that the pending claims 9, 10 and 14-27, as amended, are in condition for allowance and be passed to issue.

Respectfully submitted,

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